Girl Scout Climate Challenge Event Guide

In this event, participants will learn about climate science, connect with their communities to understand how they're impacted by climate change, and spread awareness of the issue to create sustainable change.

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Event Introduction

About the Girl Scout Climate Challenge

The Girl Scout Climate Challenge engages Girl Scouts and non-Girl Scouts of all ages in activities that get them outdoors to learn about climate science, connect them with their communities to understand how they're impacted by climate change, and have them spread awareness of the issue to create sustainable change.

The Climate Challenge includes activities that connect the science of climate with other spheres of life, such as civil society and outdoor adventures. It also includes citizen science projects curated by SciStarter, an online citizen science hub with more than 3,000 research projects that citizens can participate in.

About the Girl Scout Climate Challenge Event

This live, 120-minute session can be facilitated in person or virtually. Attendees will begin as one group, break into smaller groups to complete the patch activities for their grade level, and finally return for the closing ceremony as one group.

For full activities and instructions, check out the "Facilitation Scripts" section, beginning on page 6.

How to Use This Guide to Plan an Event

Follow a run of show and script to lead participants through activities from the Girl Scout Climate Challenge.

Before the event, you can prepare by:

- Using the "Event Planning Tool" from the "Resources and Handouts" section of this guide to plan your event.
- Sending out the "Event Flyer—In Person" or "Event Flyer—Virtual" from the "Resources and Handouts" section of this guide to invite Girl Scouts and others participating in the activation to your event.
- Reading this guide and the "Resources and Handouts" to understand the run of show and activity steps. Feel free to adapt them to cater to your audience and event.

Connecting with your co-facilitator(s) to prepare for the event and decide who will facilitate each part of the agenda. You'll need two facilitators for every breakout, including one or more Girl Scout council staff.

Tips to Make Your Event Great for Girl Scouts and Youth

Choosing activities: To complete the Climate Challenge, participants must complete 10 activities in total from the Activity Guide for their grade level. The activities in this guide have been modified from the original program to fit into the event time frame. However, they're just suggestions for how you can complete the challenge—you can adapt an activity or change it completely based on the interests and personality of the group. Check out the Activity Guides for other activity choices.

Ask and share: The excitement of running an event can sometimes be overwhelming. For that reason, informal scripting is included to help. The suggested scripting is incorporated as "ask" and "share" prompts. However, you're the expert. If you feel you don't need the script, do what makes sense for you and your event.

It's okay to have questions: Your Girl Scouts and other attendees may ask you things that you don't know the answers to—that's okay! Write down their questions and do your best to answer them after the event. It's also possible that no one knows the answers yet—maybe they'll grow up to discover and solve them!

Always remember to think about your attendees' experience: Your attendees will have varying levels of experience with climate science and advocacy—use kid-friendly language and define what you're talking about with words and visuals in a way everyone will understand. Keep this in mind as you explain concepts, and leave time for questions!

Make it a family event: Although optional, inviting Girl Scouts and their caregivers to team up and complete the Climate Challenge has several benefits, including showcasing some of our newest, most interesting programming. It can also give caregivers who may be reluctant to try STEM activities with their Girl Scout a chance in a fun hands-on experience. This shows them that they do have skills to help their Girl Scout in this sometimes-intimidating arena. It may even show caregivers that they already have the skills to become a troop volunteer—after all, they've just helped their Girl Scout complete a challenge!

Check out the "Adult Resource" in the "Resources and Handouts" for more information and tips for talking to young people about climate!
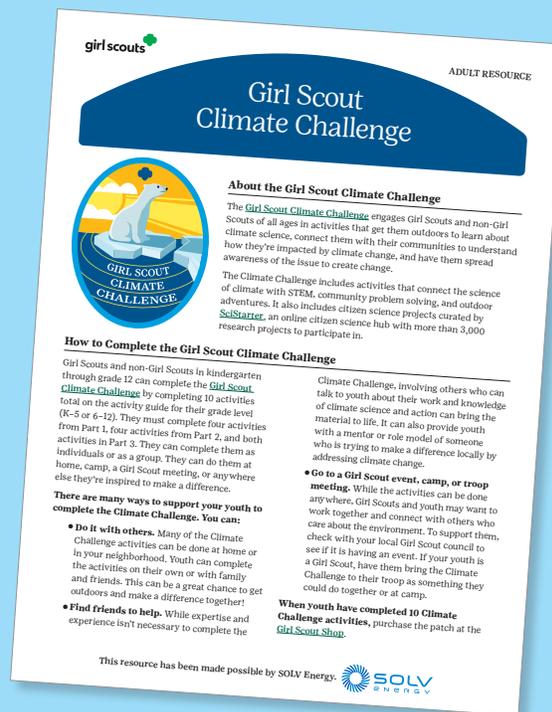
Suggested Run of Show

TIME	ACTIVITY	NOTES
Before the Event		
4–8 weeks before the event	Pre-promotion and Event Preparation	• Determine the date, format (in person or virtual), location or platform, registration costs, and budget. • Identify council staff, partners, and/or volunteers to support the event. If needed, secure panelists. • Develop the registration process and sign-up form. • Create advertising flyers with a registration link and co-branding if working with a partner.
3+ weeks before the event	Recruitment and Promotion	• The council shares event content with partners. • Recruit additional volunteers from the council and/or partner(s), if needed. • Advertise on Girl Scout website and social media as well as on partner channels, and to specific troops.
1-2 weeks before the event	Event Preparation and Rehearsal	• Send a reminder email to all attendees and volunteers. • Organize materials for the event. If virtual, coordinate dropoff or pickup of any physical materials, if needed. • If virtual, hold a run-through of the event for council staff and partner(s) to log onto the platform and check the sound, ability to share the presentation materials, event timing, etc.
30 minutes prior to the event	Facilitator Arrival and Sound Check	If virtual, council staff and partner(s) log onto the platform to make sure their sound works and presentation materials are loaded and able to be shared, etc. If in person and using mics or AV equipment, make sure everything works.
At the Event		
5 minutes	Opening Ceremony	The Girl Scout council staff and partner(s) set event expectations.
100 minutes	Breakouts	Girl Scouts divide into two breakout rooms to complete the Climate Challenge activities for their grade (K–5 and 6–12).
15 minutes	Closing Ceremony	Participants share their projects and receive the Climate Challenge patch.
End of the event	Event and Survey	• Have youth and adults complete the feedback survey. • After the event, provide an event summary with additional resources and upcoming events to participants via email.

Opening Ceremony—Facilitation Script

Event Expectations (5 minutes)

ASK: Do you like going to the beach, around your neighborhood, or to the woods? Do you have a favorite park or outdoor place you like to visit? *Let participants share any information they'd like about nature and the outdoors.*

SHARE: Today you'll learn about how climate change is affecting our beaches, forests, and neighborhoods. You'll complete activities from the Climate Challenge patch that explore climate, connect with your community, and complete a challenge project. You'll work together with other young people, community members, and experts to learn about and take action to fight climate change.

DO: Welcome everyone to the Climate Challenge event. Have each facilitator introduce themselves. Then discuss how caring for the environment is an important Girl Scout value and everyone's responsibility. Share some of the impacts of climate change, like rising shorelines, erosion, and extreme weather, and ways young people can help with this big problem. For example, they can raise awareness, work with community groups, talk to local leaders, plant trees, and prevent energy waste.

Next, ask participants, "What do you think we're going to do today?" Let participants share their ideas. Then explain, "Next, we'll break up into groups based on your age. Everyone in kindergarten through grade 5 will work together on the challenge in one group. Everyone in grades 6–12 will work together on the challenge in another group. Then we'll come back together for the closing ceremony, where you'll share your challenge projects and receive the Climate Challenge patch!"

Go over any other expectations or parameters with participants. Then help participants split up for the breakouts by grade level.

Breakout 1: Grades K–5—Facilitation Script

Breakout Overview

Participants in grades K–5 will learn about climate, weather, and the scientific method. They'll collect data to share with scientists researching climate.

Then they'll explore climate change's impact on their community, talking with one another and an expert. They'll map what they've learned and what resources their community has available.

Lastly, they'll complete a Climate Challenge project to raise awareness around one topic related to climate in their community.

What to Prepare Ahead

- Review the K–5 Climate Challenge materials for youth, including the **K–5 Activity Guide** and **Resources**.
- Gather the materials needed for the citizen science project (found on the project page on the **Girl Scout Climate Challenge on SciStarter**) as well as the other patch activities and patches for the closing ceremony.
- **For part 1: Compare weather and climate.** Research to find information about your area's climate and how it has changed over time.
- **For part 1: Take field notes and collect data.** Choose a citizen science project from the **Girl Scout Climate Challenge on SciStarter**. Review the project instructions and prepare any materials for the project.
- **For part 2: Learn about climate from an expert.** Prepare one or more facilitators to share their interests and/or career experience in relation to climate or the environment. If you can, invite a local expert (like a scientist, city planner, professor, or climate organizer) to speak. If time allows, you can host a panel of two or three speakers from different careers related to climate, the environment, and sustainability. Share the **Adult Resource** with speakers before the event.
- **For part 2: Map community resources.** Compile information about local resources to support climate solutions, such as a list of local organizations, newspaper stories, and community events.

Part 1: Explore Climate Science (40 minutes total)

Activity: Compare weather and climate. (5 minutes)

Completes Activity #1 of Part 1

Prepare Ahead: Research to find information about your area's climate and how it has changed over time.

You'll need:

- K–5 Resource: Explore Climate Science
- Colored beads or other items
- Bag or bowl
- Chart paper or whiteboard
- Marker

ASK: What's your favorite kind of weather? Do you like it when it's sunny, snowy, or rainy? Do you know the difference between weather and climate?

SHARE: Weather is a specific event—like a rainstorm or hot day—that happens over a few hours, days, or weeks. **Climate** is the average of weather patterns in an area over a longer period, like 20 or 30 years.

DO: Show attendees the beads, and explain, "Each color represents a different kind of weather in an imaginary town." Invite the group to name the town and decide what kind of weather each color represents. For example, purple beads might represent rainy days and orange beads might represent warm, sunny days. Write it down on the chart paper or whiteboard. Then put the beads in the bag or bowl and ask attendees to take turns choosing a bead. After the first bead is picked, explain, "This is the weather for your first day."

Write down the type of weather for that day and continue with the rest of your beads. If you're meeting virtually, choose the beads yourself and show them to the camera. After seven or more beads, have attendees count how many times each kind of weather occurred in the town (how many beads of each color you have). Then explain, "This is the climate for our time period." Then share the information you found about the local area's climate, pointing out how it has changed over time.

Next, ask the group, "What's climate change?" Let everyone share their ideas. Then explain, "**Climate change** is when weather patterns in certain areas change over a period of time. Most scientists believe that climate change is happening and causing warmer seasons that lead to extreme heat, stronger storms, and shifting habitats for wildlife and people. This creates problems for plants, animals, and humans, and it makes our weather more extreme. Small, naturally occurring changes are contributing to climate change, but human activity is responsible for most of it. For part 1 of the Climate Challenge, we're going to explore climate science. Scientists are working hard to understand climate change. They need **data**, or information, from all over the world, about weather, plants, animals, land, and biodiversity. So, we're going to help them collect that data!"

If attendees have questions on the science behind climate change, share the information on the K–5 Resource: Explore Climate Science.

Activity: Learn about observation and the scientific method. (10 minutes)

Begins Activity #3 of Part 1

You'll need:

- 10–15 small natural objects, such as leaves, twigs, flowers, rocks, etc. If you can't find enough objects of the same type, that's okay! Attendees will just have to describe the objects you do have with even more detail.

Each participant will need:

- 2 or more index cards, sticky notes, or sheets of paper
- Pencil

ASK: How do scientists learn about nature and other subjects?

SHARE: Scientists study nature to better understand how different parts of it work. They use what they learn to create solutions that help people, animals, and the environment. Scientists use a set of steps called the **scientific method** to solve problems and learn new things. One of the first steps of the scientific method is **observation**. Observation is watching and noticing something using all your senses, especially sight. It's the start of every experiment and scientific discovery. When scientists observe something, they look closely at all the details and think about what their observations might mean. Sometimes, scientists observe what they thought they would. Other

times, they're surprised!

DO: Show everyone the natural objects and have each attendee silently choose two items. Remind them not to point out or tell anyone what objects they've chosen. Then ask, "If you were to describe one of the items to someone else, what would you say about it? What would you say about the other item? How would you describe the differences between the two?" Have each attendee write or draw a description of each item on an index card, sticky note, or sheet of paper. Encourage them to note everything they want to communicate about the item—some of the items are very similar, so it's important for them to write as many details as they can!

Then help everyone divide into pairs or small groups to share their observations and guess what's being described. If you're meeting virtually, attendees can take turns describing their chosen objects for the large group to guess. If they guess incorrectly, encourage the presenter to review their description, adding new details to help their partner or group guess the correct object. After everyone has shared their observations, explain, "Observations are a type of data. **Data** simply means information. Data can be notes, drawings, photos, recordings, or videos of what you see and hear. It can also be information about where you are—how hot or cold it is, what the weather is like, and your location."

Activity: Take field notes and collect data. (25 minutes)

Completes Activities #3, #4, and #6 of Part 1

Prepare Ahead: Before the event, choose a citizen science project from the Girl Scout Climate Challenge page on SciStarter.

You'll need:

- K–5 Resource: Explore Climate Science
- Computer, tablet, or smartphone to log the group's data

Each participant will need:

- Citizen science project materials (found on the Girl Scout Climate Challenge page on SciStarter)
- Index cards, sticky notes, or sheets of paper with observations from "Activity: Learn about observation and the scientific method."
- Paper

- Pencil
- Tools to help with observation, like binoculars, magnifying glasses, etc. (optional)

ASK: How do scientists learn about climate change?

SHARE: Scientists conduct studies and experiments to observe what is happening with climate and the environment. They need data from all over the world, about weather, plants, animals, air, and land. When scientists need a lot of data for their research, they ask volunteers to collect it. When regular people help professional scientists with their research, that's **citizen science**. Scientists use data from citizen scientists, just like you, to find out new things about our world. Scientists use what they learn from the data to create solutions that help others, like helping people when they're sick, keeping our communities safe from pollution, and of course helping to stop climate change. We can help scientists learn more about climate by observing, measuring, gathering, and sharing data.

DO: Introduce scientific questions and hypotheses. Explain, "Scientists ask **scientific questions** about their data and observations. Once scientists have a scientific question, they make a guess, or form a **hypothesis**, about what they think the answer is, using what they already know." Have attendees review each of their descriptions and form two scientific questions for each. For example, "What kind of rock is this? Why did the leaf change colors?" If attendees need help determining whether their questions are scientific, ask, "What is your guess or hypothesis for what you would learn? How could you find an answer? What experiment or test could you conduct? What data could you collect?" Let attendees share their questions with a partner or the group.

Next, let the group know which citizen science project they'll be participating in from the [Girl Scout Climate Challenge page on SciStarter](). Read the description aloud from the project page on SciStarter and review the purpose of the citizen science project. Then ask attendees, "What scientific question are we helping the scientists to answer? What do you already know about the subject? What's your hypothesis for what we'll observe?" Let everyone share their ideas. Then go over the project instructions and hand out project materials. Explain, "Scientists need somewhere to store their observations, so they keep field notes. For example, a scientist will include the date and location. They may want to write down what the weather is like. They might want to make sketches of tracks or record measurements of soil temperature. They might also take photos or videos or record sounds as part of their field notes. All the observations and field notes are data that scientists can use for their research. Just like a real scientist, you can write or draw field notes to record your observations."

Then bring attendees outdoors (if meeting in person) or instruct them to go to a window and collect data for their citizen science project by writing or drawing field notes with their observations. After, bring everyone back together to share their data. Explain, "When scientists come back from the field, they review their notes to make sure their data is detailed and matches what they observed. They also reflect on their data and add new notes about what it means. This is called **data analysis**." Let attendees share their observations and decide on one set of data points for you to submit on behalf of the group. Then upload or send it according to the project's instructions on the [Girl Scout Climate Challenge page on SciStarter](). If you're meeting virtually, have adults upload their unique data on behalf of their youth (no one under age 13 may upload data).

Part 2: Connect with Your Community (35 minutes total)

Activity: Explore how climate impacts communities. (5 minutes)

Completes Activity #9 of Part 2

You'll need:

- K–5 Resource: Connect with Your Community

ASK: How does climate change impact people? Does it affect everyone in the same way?

SHARE: Climate change is a big problem, and many communities are not prepared. Some near coastal areas may end up underwater as sea levels rise. Other communities' climates, like those in California, are becoming even more dry and hot. That makes fires more common. Homes and land are burning up. When we take care of our planet, we take care of our communities. Everything and everyone is connected in our global environment.

DO: Introduce attendees to part 2 of the Climate

Challenge. Explain, "Climate change happens everywhere, but it affects different people and communities in very different ways. Making sure that those most impacted by climate change are included in the solutions is called climate justice. For part 2 of the Climate Challenge, we're going to explore how climate change is impacting our community. We'll pair up to find out what we know, connect with experts and each other to learn even more, and explore community resources to make a difference. We'll find out what others are concerned about and what others are doing about climate change."

If attendees want more information or have questions on climate change's impact on communities, share the information on the K–5 Resource: Connect with Your Community.

Activity: Interview a community member. (10 minutes)

Completes Activity #2 of Part 2

You'll need:

- K–5 Resource: Connect with Your Community
- Chart paper or whiteboard
- Marker

Each participant will need:

- Paper
- Pencil

ASK: How does thinking about climate change make you feel? What are your friends and family members saying about climate change?

Let attendees share any information they'd like about

their own or their friends' and family's feelings about climate change. Know that many kids today are angry and afraid. They know about the impact of climate change and are worried about the future of our planet. You can make climate change less scary by letting youth know they aren't alone. Together you can learn what causes climate change, how people can help address it, and what they can do.

SHARE: Climate change can be stressful and overwhelming—it's not a problem we can solve on our own. However, you can be a leader, advocate, and activist for the environment at any age! Start by thinking about changes we can make individually as well as what our families, communities, states, the nation, and the world can do.

DO: Invite attendees to work in small groups,

each with an adult facilitator, to share more about what they know and their feelings about climate change. You can also choose to have the conversation as one group.

Share the questions below to start the conversation:

- In part 1, you made a lot of observations. Did you spot anything harmful or disrupting to nature? What did you observe?
- What issues have you observed related to climate in your community? These might be problems or issues you've seen, read, or heard about from others.
- What questions do you have about climate? What do you already know? What do you need to find out?

As groups discuss, create five lists or boxes to write in on chart paper or the whiteboard. Label them "Problems We've Observed," "What We Know," "Questions," "Resources to Help," and "Ways to Act."

After five minutes, bring everyone back together to share what they discussed. As each group shares, add their ideas to the correct list. Save the lists to use for the remainder of the event.

Activity: Learn about climate from an expert. (10 minutes)

Completes Activity #3 of Part 2

Prepare Ahead: Prepare one or more facilitators to share their interests and/or career experiences in relation to climate and the environment. If you can, invite a local expert (like a scientist, city planner, professor, or climate organizer) to speak. It may help to reach out to your network or put out a call for volunteers. If time allows, you can host a panel of two or three speakers from different careers related to climate, the environment, and sustainability. Share the **Adult Resource** with speakers before the event.

You'll need:

- The group's lists from "Activity: Interview a community member" on chart paper or whiteboard
- Marker

ASK: What kinds of jobs can you think of where people could help fight climate change?

SHARE: People everywhere are working to stop climate change. Citizen scientists gather data. Engineers develop alternative energy sources and ways to remove greenhouse gases from the atmosphere. People plant trees, preserve existing forests, and design urban areas to prevent erosion or heat islands.

DO: Have each facilitator share a quick description of their career and how it relates to climate and/or sustainability. If it's not an easy connection to make, share why you care about the environment and what action you take to protect it. If you were able to invite a local expert, introduce them to attendees before they share. Each person can share information such as:

- What's your job or career? How does what you do help the planet?
- What interests you about the environment and climate?
- Have you noticed changes in the climate or weather?
- What things are people doing to make climate change worse? What are some unique ways people are dealing with climate change?
- What do you think is most important for us to know about climate change?
- What can we do to help our community learn more and find solutions to climate change?

After they share, let attendees ask questions and add any new ideas or information to the lists on the chart papers or whiteboard.

Activity: Map community resources. (10 minutes)

Completes Activity #4 of Part 2

Prepare Ahead: Compile information about local resources to support climate solutions, such as a list of local organizations, newspaper stories, and community events.

You'll need:

- K–5 Resource: Connect with Your Community
- The group's lists from "Activity: Learn about climate from an expert" on chart paper or whiteboard
- Marker

Each participant will need:

- Paper
- Pencil
- Markers or colored pencils

ASK: What are some activities that you would be interested in that help our climate and planet? What type of support or knowledge do you want or need to explore climate change?

Let attendees share any ideas they have for getting involved in climate action. As they share what support they'd like or questions they have, add their ideas to the lists on the chart papers or whiteboard.

SHARE: The world needs to make big changes to stop climate change. We need better plans for coping with fires, floods, and hurricanes. We need safer and less expensive places to live. We need money to create clean public transportation and energy. We can start by learning what is going on in our community. A community is a group of people with something in common, like your family, school, Girl Scouts, or your town. There's a big community of scientists, organizers, students, and others working together to stop climate change. By connecting with others, you can learn new information and skills. You can work together to change the world!

DO: First, have the group consider what people, places, or groups make up your community. Have everyone draw on the conversations they've had during the event and what they may have learned from the expert(s). Share the resources you gathered with attendees. Then, review the lists you've created thus far ("Problems We've Observed," "What We Know," "Questions," "Resources to Help," and "Ways to Act"). Add any new ideas for the specific community. Star anything you've added that applies to your community. Then ask the group, "What's important to our community when it comes to climate? What are our wants, needs, and concerns?" Let everyone share their ideas.

Through this discussion, have the group decide on one or more topics to focus on in part 3, such as protecting animal habitats, encouraging more people to plant trees, or raising awareness about pollution. As they discuss possible topics, be sure they make the connection between their issue and climate change: climate change is destroying habitats, trees clean the air, and air pollution adds greenhouse gases. Depending on the number of participants, you may want to divide the group into smaller teams of around five people each to choose a topic to work on in part 3.

Part 3: Share Hope
(25 minutes total)

Activity: Introduction (5 minutes)

ASK: How can you inspire others to get involved in climate action?

SHARE: When you collected data for a citizen science project, you helped make the world a better place. You helped a scientist do research, and you've increased how much people know about the world. You've also observed weather and talked to community members and experts to gather data about climate change. Now it's time to use all you've learned to come up with a project to tell others about climate change and ask them to get involved. Climate change is a big problem no one person can solve, so work together to raise awareness around one climate topic! Later you'll share your project to get others involved.

DO: If you haven't yet, have the group decide on one or more topics to focus on. Depending on the number of participants, you may want to divide the group into smaller teams of around five each. Then discuss what it means to "raise awareness." Let attendees share their ideas, adding to the group's "Ways to Act" list if they fit.

Activity: Create your challenge project. (20 minutes)

Completes Activity #1 of Part 3

You'll need:

- K–5 Resource: Share Hope

Each participant will need:

- Materials for the Climate Challenge project. For example, you may need a smartphone or camera if you're creating a video, a laptop if you're creating a PowerPoint presentation, or poster board and markers if you're making a poster campaign.
- Pencil
- Paper

ASK: With unlimited time and materials, what would you create or do to spread awareness about the topic?

Attendees might say, "make a poster," "make a video," "make a T-shirt," etc., and "meet with the president," or "meet local scientists," etc.

SHARE: To stop climate change, everyone needs to act! One way you can inspire others to act is to show them what you are doing and challenge them to do the same. Climate change might seem like an unsolvable problem, but you can share hope with others by helping them learn about what causes climate change and what they can do to fight it.

As you plan your Climate Challenge project, think about how a scientist would plan a project. First they would choose a problem to research. You just did this when you chose one part of climate change to focus your project on. Scientists would then make lots of observations about the subject with lots of details. They'd make field notes, which become their data. Their data can be analyzed and shared. You've done this by creating lists with data about resources and information on how climate impacts our community.

After they review their data, scientists try to use all they've learned to create a solution to their original problem. That's what you'll be doing now! Create a message to share with your community. Use what you've learned to convince them to make a change. Be sure to include one concrete action that people can take for the planet.

DO: Invite the group(s) to brainstorm what they can create to spread awareness with the community about climate change. For example, they might make a skit or video, design posters, make a toolkit, or create a climate pledge others can sign.

If the group needs ideas, share those found below as well as other information that can be found on the [K–5 Resource: Share Hope](#):

- Choose a topic that reduces carbon dioxide, or CO_2, like planting trees or a garden. You can inspire people to walk, ride a bike, or take public transportation. You can ask others to use less plastic.

- Educate others about climate change and what they can do through art. Make posters. Create a puppet show. Write a climate change story. Paint a mural.

- Call on community leaders, government officials, and businesses to make climate-friendly choices and policies. Write letters. Make a video. Let your elected officials know how you feel about climate change and what you'd like them to do about it.

If you have a project idea already planned for attendees, let them know and brainstorm how they can personalize the project.

To keep the event moving, here are some projects you can suggest:

- **Create a poster campaign about water or saving energy or personal habits.** Posters are a great way to share information. They're easy and inexpensive to make. Participants could make a series of posters showing different aspects of a certain issue, or posters highlighting actions people can take to fight climate change. As they work, ask questions like, "What do you want the posters to say? What will the poster look like? What information will you share? What will you ask others to do to get involved?"

- **Design a bookmark with tree facts.**

A bookmark is a creative way to spread information. It's small. People need them. And a bookmark with tree facts is made out of a tree! As participants make their bookmarks, ask questions like, "What do you want the bookmark to say? What will it look like? What information will you share? Will you list local resources or community groups? What will you ask others to do to get involved?"

- **Make a video encouraging people to use bikes and public transportation.** A video lets you reach many people with important information and images. It can be shared in a lot of ways—online, via email, and at events. As participants work, ask questions like, "What do you want to say? Do you want to wear a costume? Do you want to use music? Where will you film it? Who could you ask to be in it? What kind of public transportation options will you spotlight? What information will you share? What will you ask others to do to get involved?"

- **Send a message on climate action.** Local, national, and international officials need to know what everyday people like you and your community think about climate change. One way participants can create change is by sharing their opinions. They can write a letter or draw a picture to send to someone you think can make a difference for climate change. Help participants identify a recipient, create their message, and send it to the right person. You can find most email or mailing addresses for government agencies or representatives on their websites. As they work, ask questions like, "What do you want to say? What information will you share? What will you ask them to do to get involved?"

When you're done, turn to page 26 for the Closing Ceremony, where the group(s) will share their project and receive the Girl Scout Climate Challenge patch.

Breakout 2: Grades 6–12—Facilitation Script

Breakout Overview

Participants in grades 6–12 will learn about climate, weather, and the scientific method. They'll collect data to share with scientists researching climate.

Then they'll explore climate justice and climate change's impact on their community, talking to each other and an expert. They'll map what they've learned and what resources their community has available.

Lastly, they'll complete a Climate Challenge project to raise awareness around one topic related to climate in their community.

What to Prepare Ahead

- Review the 6–12 Climate Challenge materials for youth, including the **6–12 Activity Guide** and **Resources**.
- Gather the materials needed for the citizen science project (found on the project page on the **Girl Scout Climate Challenge on SciStarter**) as well as the other patch activities and patches for the closing ceremony.
- **For part 1: Compare weather and climate.** Research to find information about your area's climate and how it has changed over time.
- **For part 1: Take field notes and collect data.** Choose a citizen science project from the **Girl Scout Climate Challenge on SciStarter**. Review the project instructions and prepare any materials for the project.
- **For part 2: Learn about climate from an expert.** Prepare one or more facilitators to share their interests and/or career experience in relation to climate or the environment. If you can, invite a local expert (like a scientist, city planner, professor, or climate organizer) to speak. If time allows, you can host a panel of two or three speakers from different careers related to climate, the environment, and sustainability. Share the **Adult Resource** with any speakers before the event.
- **For part 2: Map community resources.** Compile information about local resources to support climate solutions, such as a list of local organizations, newspaper stories, and community events.

Part 1: Explore Climate Science (40 minutes total)

Activity: Learn about the greenhouse effect. (5 minutes)

Completes Activities #1 and #6 of Part 1

Prepare Ahead: Research to find information about your area's climate and how it has changed over time.

You'll need:

- 6–12 Resource: Explore Climate Science
- 2 glasses
- 4 cups cold water
- 10 ice cubes
- Plastic bag
- Rubber bands

ASK: What's your favorite kind of weather? Do you like it when it's sunny, snowy, or rainy? Do you know the difference between weather and climate?

SHARE: Weather is a specific event—like a rainstorm or hot day—that happens over a few hours, days, or weeks. **Climate** is average weather patterns in an area over a longer period—like 20 or 30 years. **Climate change** is when weather patterns in certain areas change over a period of time. Most scientists believe that climate change is happening and causing rising seas, stronger storms, and shifting habitats for wildlife and people. This creates problems for plants, animals, and humans, and it makes our weather more extreme. Small, naturally occurring changes are contributing to climate change, but human activity is responsible for most of it.

DO: Start by introducing participants to greenhouse gasses and the carbon cycle. Ask, "Does anyone know what photosynthesis is? What do plants have to do with climate?" Let everyone share their ideas, and explain, "Plants take carbon out of the air and use water and energy from the sun to make their own food. This is photosynthesis. About half of the carbon plants take in, gets stored in the plant, while the other half is released back into our atmosphere. Over time, when the plants die, the carbon they stored gets released back into the air. This is called the **carbon cycle**." Ask, "Why is it a problem to have too much carbon in our atmosphere?" Let everyone share their ideas, and explain, "When forests get cut down or too many plants die, not as much carbon is taken out of the atmosphere. Industrialization, or the use of factories, and other changes in technologies create carbon dioxide. Carbon dioxide, or CO_2, is one of many greenhouse gases that traps heat from the sun in our atmosphere. This causes an increase in the earth's temperature."

Next, start a quick experiment to demonstrate the greenhouse effect. Fill two glasses of equal size with two cups of cold water and place five ice cubes in each glass. Then, wrap one of the glasses in a plastic bag and seal it tightly. Place both glasses in the sunlight to examine later during the event.

Lastly, introduce participants to part 1 of the Climate Challenge. Explain, "For part 1 of the Climate Challenge, we're going to explore climate science. Scientists are working hard to understand climate change and find solutions. They need **data**, or information, from all over the world, about weather, plants, animals, land, and biodiversity. So, we're going to help them collect that data! Citizen scientists are people who observe the world and gather data. They're part of the community of people looking for answers."

If attendees want more information or have questions on the science behind climate change, share the information on the 6–12 Resource: Explore Climate Science.

Activity: Collect data for climate science. (25 minutes)

Completes Activities #2 and #4 of Part 1

Prepare Ahead: Before the event, choose a citizen science project from the Girl Scout Climate Challenge page on SciStarter.

You'll need:

- 6–12 Resource: Explore Climate Science
- Computer, tablet, or smartphone to log the group's data

Each participant will need:

- Citizen science project materials (found on the Girl Scout Climate Challenge page on SciStarter)
- Paper
- Pencil
- Tools to help with observation, like binoculars, magnifying glasses, etc. (optional)

ASK: How do scientists learn about nature and other subjects?

SHARE: Scientists study nature to better understand how different parts of it work. They use what they learn to create solutions that help people, animals, and the environment. Scientists use a set of steps called the **scientific method** to conduct research, solve problems, and learn new things. Citizen scientists are people who are curious about the world and want to make a difference. They volunteer to collect data, or information, and send it to scientists.

DO: Let the group know which citizen science project they'll be participating in from the Girl Scout Climate Challenge page on SciStarter. Read the description aloud from the project page on SciStarter and go over the steps through the lens of the scientific method. First, explain, "When scientists start a new project, they choose the subject or **purpose** of their research. Sometimes this is something specific that a scientist wants to learn more about, like a certain bird or plant.

Other times scientists may want to answer questions like, 'How is the climate changing in different communities?' The questions they're trying to answer are the scientific questions for their research." Then review the instructions for the citizen science project. Ask attendees, "What's the purpose of the project? What scientific question are we helping the scientists to answer?" Let everyone share their ideas.

Have participants form a hypothesis for their citizen science project. Explain, "Once scientists have a scientific question, they make an educated guess, or a **hypothesis**, about what they think the answer is. A hypothesis isn't ever 100% right or wrong—if data confirms a hypothesis, it just means that the scientists have more data about the subject, its environment, and how it interacts with the world." Then ask, "What's your hypothesis for the citizen science project? What do you already know about the subject? What do you think the answer is to the scientific question the scientists are trying to answer?" Let everyone share their ideas and write down their hypotheses.

Then go over the project instructions and hand out project materials. Explain, "**Observation** is watching and noticing something using all your senses, especially sight. Observations are a type of data. They're the beginning of every experiment and scientific discovery, and they give scientists a starting place to learn more about how the world works. To store your observations, you can keep **field notes**. Field notes might include the date and location as well as notes, sketches, photos, videos, and even audio recordings. They may want to record what the weather is like, what animal tracks they find, or measure soil temperature. Citizen science is all about sharing observations like these for scientists to use in their research."

Then bring attendees outdoors (if meeting in person) or instruct them to go outdoors and collect data by making field notes with their observations. After, bring everyone back together

to share their data. Explain, "When scientists come back from the field, they review their notes to make sure their data is detailed and matches what they observed. They also reflect on their data and add new notes about what it means. **Data analysis** is when a scientist looks at all the information and finds patterns to understand the world better." Let attendees share their observations and decide on one set of data points for you to submit on behalf of the group. Then upload or send it according to the project's instructions on the [Girl Scout Climate Challenge page on SciStarter](). If you're meeting virtually,

have participants or adults (on behalf of any participants under 13) upload their own data set for their location.

Lastly, explain, "Now that you've sent your data to the scientists, they'll analyze it along with data from other citizen scientists around the world! There are many different ways scientists could analyze their data. For example, they might compare it against other data sets, find a way to present it (like a graph, chart, etc.), or look at the data and decide they need to collect more."

Activity: Learn about climate from an expert. (10 minutes)

Completes Activity #9 of Part 1

Prepare Ahead: Prepare one or more facilitators to share their interests and/or career experience in relation to climate, social justice, and the environment. If you can, invite a local expert (like a scientist, city planner, professor, or climate organizer) to speak. It may help to reach out to your network or put out a call for volunteers. If time allows, you can host a panel of two or three speakers from different careers related to climate, the environment, and sustainability. Share the [Adult Resource]() with any speakers before the event. If you aren't able to find a speaker, share G-Team TV's interview with climate change activist and Girl Scout Maddie G., beginning [here]() at 9:14 (only available in English).

ASK: Who is working on the climate change problem? What kinds of jobs or careers do the people who are contributing to the effort have? How are people volunteering to help?

SHARE: All over, people are making a difference to stop climate change. Citizen scientists gather data. Engineers develop alternative energy sources and ways to remove greenhouse gases from the atmosphere. People plant trees, preserve existing forests, and design urban areas to prevent erosion or heat islands.

DO: Have each facilitator share a quick description of their career and how it relates to climate, social justice, and/or sustainability. If it's not an easy connection to make, share why you care about the environment and what action you take to protect it. If you were able to invite a local expert, introduce them to attendees before they share. Each person can share information such as:

- What's your job or career? How does what you do help the planet?
- What interests you about the environment and climate?
- Have you noticed changes in the climate or weather?
- What things are people doing to make climate change worse? What are some unique ways people are dealing with climate change?
- When it comes to solutions, what kinds of technology, policies, and advocacy might help?
- Where do you see the biggest chance for improvement in the next 10 years?
- What can we do to help our community learn more and find solutions to climate change?

After they share, let attendees ask questions.

Part 2: Connect with Your Community (35 minutes total)

Activity: Learn about climate justice. (10 minutes)

Completes Activities #1 and #3 of Part 2

You'll need:

- 6–12 Resource: Connect with Your Community
- 2 glasses with water (1 covered with a plastic bag), first set aside during part 1

ASK: How does climate change impact people? Does it affect everyone in the same way?

SHARE: Climate change affects the entire planet. Communities, or groups of people, experience it differently depending on where they are and who lives in them. Some places face rising water lines or flooding. Others are becoming more dry and hot, leading to more fires. Climate justice recognizes that climate change affects people in different ways. It means that we need to combat climate change in ways that are fair. The people and communities most impacted should be heard, respected, and included in finding solutions and making decisions.

DO: Introduce attendees to part 2 of the Climate Challenge. Explain, "For part 2 of the Climate Challenge, we're going to explore climate justice and how climate change is impacting our community. We'll pair up to find out what we know, connect with experts and each other to learn even more, and explore community resources to make a difference. We'll find out what others are concerned about and what others are doing about climate change." Then have participants brainstorm other ways different communities may be impacted by climate change. For example:

- **Cities** with areas that have fewer trees may experience "heat islands" where buildings and pavement absorb and retain heat from the sun. Without trees to cool and clean the air, these areas have more pollution and often very high temperatures. Black, Indigenous, and people of color (BIPOC) and low-income communities are more likely to have heat islands and other communities.

- **Rural communities** may experience erosion, mudslides, and flooding when trees or other native plants are removed or die. This impacts farm and ranch land.

Next, show the two glasses you started to experiment with in part 1. The glass that was covered in plastic should be warmer because the bag will have trapped the heat in the glass. Explain, "This is the same thing that happens when greenhouse gases trap heat in the atmosphere. Can you imagine this happening with our planet? What if each glass was a community? How are they affected differently?" Let participants share their ideas. Then explain, "In many areas, laws and government policies have caused a majority of BIPOC to experience more of the impact of climate change. Housing and lending policies and other city planning decisions have forced them into places with fewer trees. As a result, those areas experience heat islands and higher temperatures, just like how the glass that was covered became warmer. This affects humans' health, leaving people in BIPOC communities more likely to die from heat-related causes."

If attendees want more information or have questions on climate justice or climate change's impact on communities, share the 6–12 Resource: Connect with Your Community.

Activity: Survey community members about climate. (10 minutes)

Completes Activity #2 of Part 2

You'll need:

- 6–12 Resource: Connect with Your Community

Each participant will need:

- Climate Change People Search
- Pencil

ASK: How does thinking about climate change make you feel? What are your friends and family members saying about climate change?

Let attendees share any information they'd like about their or their friends and family's feelings about climate change. Know that many kids today are angry and afraid. They know about the impact of climate change and are worried about the future of our planet. You can make climate change less scary by letting youth know they aren't alone. Together you can learn what causes climate change, how people can help address it, and what they can do.

SHARE: Climate change affects your community in different ways. Climate change can be stressful and overwhelming—it's not a problem we can solve on our own. However, you can be a leader, advocate, and activist for the environment at any age! It can help to start by thinking about changes we can make individually as well as what our families, communities, states, the nation, and the world can do. To get started, explore how different community members are impacted.

DO: Hand out copies of the Climate Change People Search, found on page 32. Invite participants to move around the space and talk to one another to find someone who can answer "yes" to one of the items on the sheet. They can only have one response per person. As they search, participants can share their experiences and/or feelings about climate before moving on to talk to someone else. If you're meeting virtually, go through the list individually and together as one group (or in smaller breakout rooms), asking for a volunteer to share their experience for each item on the list.

After playing, compare notes. Ask questions like, "Did you have anything in common with anyone else? Was there anything that a lot of people answered "yes" to? What about something that no one could say "yes" to?"

Activity: Map community resources. (15 minutes)

Completes Activities #6 and #11 of Part 2

Prepare Ahead: Compile information about local resources to support climate solutions, such as a list of local organizations, newspaper stories, and community events.

You'll need:

- 6–12 Resource: Connect with Your Community
- Sample Mind Map
- Chart paper
- Marker

Each participant will need:

- Paper
- Pencils
- Markers or colored pencils

ASK: What are some activities that you would be interested in that help our climate and planet? What type of support or more knowledge do you want or need to explore climate change?

As attendees share what support they'd like or questions they have, take notes on a piece of chart paper with two sections: "Support Needed" and "Questions."

SHARE: The world needs to make big changes to stop climate change and advance climate justice. We can create better plans to avoid and survive natural disasters. We can build less expensive and more environmentally friendly housing. We can spend more money to create clean public transportation, like electric cars and buses. We can research clean energy, like solar and wind power. People everywhere are coming together to make a difference. There's a big community of scientists, organizers, students, and others who know about climate and are trying to create change. Today, we can start by learning what is going on at home in our community. By connecting with others who care about the same thing as you, you can learn new information and skills. You can work together to change the world! For this activity, we'll make a map that helps us identify climate issues in our community and resources that might help.

DO: First, have the group consider what people, places, or groups make up their community, such as school, a sports group, a house of worship, Girl Scouts, the wider world, or another option completely! Write all their ideas on chart paper. Invite everyone to envision how that community looks. Encourage them to get into it—describe the features and characteristics, including the buildings, streets, landmarks, businesses, libraries, schools, and parks. Write their descriptors on another sheet of chart paper.

Then ask, "What are the biggest environmental problems facing our community? What about air quality or pollution? Open space and parks for kids to play in?" Let participants share their ideas. Then continue the discussion by digging more deeply into climate's impact on the community. Write those ideas on a third chart paper. Ask questions like, "Who is in the community? How are different people and parts impacted by climate change? How can the people or place be a resource to support climate action in your community?"

Through the discussion, have participants work together to make a list of the resources for climate change and climate justice in your community. Write their ideas on another sheet of chart paper. For example:

- City hall is where you can contact the mayor and other elected officials.

- A house of worship is where you can meet with faith leaders and community members who believe in a responsibility to care for and protect the planet.

- A community garden is where you can contact people who may know ways gardening and plants in general can be used to make communities more resilient.

- The owner of a local salvage yard can develop effective ways to deal with trash that's hard to recycle (such as refrigerators, televisions, computers, and cellphones).

Show participants the **Sample Mind Map**. Invite them to draw their own with community climate at the center. If they know the causes of the problem—or learned them at this event—have them add them in one color. Add people, organizations, or other things that are impacted by the problem in another color. Remind them they can look at the chart-paper lists you created for ideas (Support Needed, Questions, Community Members, Community Features, Community Environmental Challenges, Resources).

Share the resources you gathered with attendees. It may also help to ask questions like, "Who has knowledge and background of climate change and action in our community? What work is already happening? Who may be good at helping think through solutions or helping us get involved? Who can access additional resources?" Give participants the chance to study the resources and then add any information to their mind maps that they think could help.

Part 3: Share Hope (30 minutes total)

Activity: Introduction (10 minutes)

Completes Activity #10 of Part 2

ASK: How can you inspire others to get involved in climate action?

SHARE: When you collected data for a citizen science project, you helped make the world a better place. You helped a scientist do research. You increased how much people know about the world, too. You've also observed weather and talked to community members and experts to gather data about climate change in your community. Now, it's time to use all you've learned to choose a project to tell others about climate change and ask them to get involved. Climate change is a big problem no one person can solve, so work together to raise awareness around one climate topic! Later, you'll share your project to get others involved.

DO: Invite participants to imagine they're a team of environmental engineers, government leaders, city planners, community groups, individuals, and others working to find climate solutions for the community. Ask, "What can you do to create a city that pays attention to climate change issues?" Let participants share their ideas. For example, they might want to include things like build low-emissions buildings or mass transit systems. Encourage the group to think about a variety of populations, such as those systematically denied access to decent housing, education, and air quality. Ask questions like, "What would your city do for those communities? Also think about the environment around your city—do you need to make a plan for coastal flooding, forest fires, or drought?"

Next, shift the conversation to discuss what participants can do to create change. Ask participants, "What can we as individuals and as a community do to fight climate change? What about businesses and governments?" If needed, share some of the examples below:

- What **people and communities** do contributes CO_2 to the atmosphere. Traveling by car or airplane, using plastic, wasting water and food, and leaving lights on when not needed are all examples of actions that waste energy and resources, usually through the burning fossil fuels. People can make changes to reduce their carbon footprint.

- What **corporations and governments** do makes an even bigger impact. Fossil-fuel-based manufacturing and transportation pumps a lot of CO_2 into the atmosphere. Clear-cutting forests for plantations to grow crops like bananas, palm oil, sugar cane, and coffee causes erosion and destroys trees that would be pulling carbon out of the atmosphere.

- When **energy companies and local and national governments** make decisions about what kind of energy to use to create electricity, their decisions have implications for climate change. If they choose to build infrastructure for coal or natural gas power plants, that will emit more CO_2 than other forms of energy creation, like hydroelectric (water), solar, or wind power plants. When state and national governments make rules about fuel efficiency in vehicles, pollution, or carbon limits on manufacturing, they're also making decisions that affect climate change.

Wrap up the conversation by explaining, "Climate justice requires justice for all. It recognizes that those who have benefitted the most from fossil fuels and deforestation, including businesses,

should pay for and do more of the work to combat climate change."

Lastly, have the group decide on one or more topics to focus on for part 3, such as local water quality, heat islands and the importance of trees, or air pollution's disproportionate impact on BIPOC communities. Depending on the number of participants, you may want to divide the group into smaller teams of around five to choose a topic to work on together.

Activity: Create your challenge project. (20 minutes)

Completes Activity #1 of Part 3

You'll need:

- 6–12 Resource: Share Hope

Each participant will need:

- Materials for the Climate Challenge project. For example, you may need a smartphone or camera if you're creating a video, a laptop if you're creating a PowerPoint presentation, or poster board and markers if you're making a poster campaign.
- Pencil
- Paper

ASK: With unlimited time and materials, what would you create or do to spread awareness about the topic?

SHARE: To stop climate change, everyone needs to act! One way you can inspire others to act is to show them what you are doing and challenge them to do the same. Climate change may seem like an unsolvable problem, but you can share hope with others by helping them learn about what causes climate change and what they can do to fight it.

As you plan your Climate Challenge project, think about how a scientist would plan a project. First they would choose a subject to research. You just did this when you chose one part of climate change for your project. Scientists would then make lots of observations about the subject with lots of details. They'd make field notes, which become their data. Their data can be analyzed and shared. You've done this by creating lists with data about resources and information on how climate impacts our community. After they review their data, scientists try to use all they've learned to create a solution to their original problem. That's what you'll be doing now! Create a message to share with your community. Using what you've learned, convince them to make a change. Include one concrete action that people can take for the planet.

DO: Invite the group(s) to brainstorm what they can create to spread awareness with the community about climate change. For example, they might develop a social media campaign, design an infographic, make a toolkit, or create a climate pledge others can sign on to.

If the group needs ideas, share those found below as well as other information that can be found on the **6–12 Resource: Share Hope**:

- **Choose a topic that reduces CO_2**, like planting trees or a garden. You can inspire people to walk, ride a bike, or take public transportation. You can ask them to use less plastic and water.

- **Educate others** about climate change and what they can do through art. Make posters. Write poetry. Stage a play. Paint a mural. Write a song.

- **Use digital technology** to create social media campaigns, educate others, and organize people to participate in community events and rallies.

- **Call on community leaders**, government officials, and businesses to make climate-friendly choices and policies. Write letters. Make a video. Let your elected officials know how you feel about climate change and what you'd like them to do about it.

If you have a project idea already planned for attendees, let them know and brainstorm how they can personalize the project.

To keep the event moving, here are some projects you can suggest:

- **Design a poster, toolkit, infographic, or fact sheet.** Invite participants to find out as much background and data as they can about their topic, using the materials you've prepared and technology to do additional research. Then have participants decide what the most important information is and what they can create to highlight facts and talking points to get others involved. As they work, ask questions like, "What information will you share? What will it look like? How will you ask others to get involved?"

- **Create a social media campaign.** Explain, "Social media is one of the most powerful ways to bring awareness to an issue and to help promote climate action and justice for all. Think of the social media campaigns for breast cancer, Black Lives Matter, and the #MeToo movement. Some messages are simple statements or have symbols with recognizable colors or graphics." Then invite participants to research and learn more about their topic, using the materials you've prepared and technology. Have participants decide what the most important information is for their campaign and how they want others to get involved. Then have them design posts for social media, combining photo and text to tell the story. As they work, ask questions like, "What information will you share? Who are you trying to reach? What kind of content will be most engaging for your audience? What will you ask others to do to get involved?"

- **Write to leaders.** Local, national, and international leaders need to know what everyday people like you and your community think about climate change. One way participants can create change is by sharing their opinions. Have them first research and learn more about their topic, using the materials you've prepared and technology. Have them identify a recipient for their letter, such as a local educational leader, community leader, state representative, or anyone else who would be a decision-maker. Then support them to create their message and send it to the right person. You can find most emails or mailing addresses for government agencies or representatives on their websites. As participants work, ask questions like, "What do you know about this person's views on climate change? What do you want to say to them? What information will you share? What will you ask them to do to get involved?"

- **Make a video.** Share your climate change message through a video. Video is a powerful medium to engage, entertain, and inspire. Invite participants to brainstorm different formats or content for their video. For example, they could write and perform a song or a skit, demonstrate simple experiments that teach people about weather, climate or climate change, or interview experts and community members about climate change and its impact. They could do "news" segments where they document climate issues, like heat islands or how climate change impacts some groups of people more than others. Have them first research and learn more about their topic, using technology and the materials you've prepared. Then have participants decide what they want to include in their video and plan it. As they are deciding, ask them questions like, "What are the most important things you want people to know? What would be the best way to do that in a video? Should it be funny or serious, should it use graphics, should it be in interview format? Who are you trying to reach? What will you ask others to do to get involved?" Then assist them as they divide up the tasks and film various segments. Help them edit their video with an editing app. They might want to add music or graphics.

When you're done, turn to page 26 for the Closing Ceremony, where the group(s) will share their project and receive the Girl Scout Climate Challenge patch.

Closing Ceremony—Facilitation Script

Project Presentations (10 minutes)

Completes Activity #2 of Part 3, finishing the Climate Challenge for all attendees

DO: Once everyone is back together, have each group share what they created for their Climate Challenge project. They can explain what they made and answer questions like:

- What problem or issue did you identify for the project?
- How did you use data and the scientific method to design your project?
- How does your project benefit the community?
- How can others help solve the issue?

Closing Ceremony and Patches (5 minutes)

ASK: What was your favorite part of the Climate Challenge? What's your next step to make a difference for the planet?

Give everyone the opportunity to share their thoughts about the activities, their ideas for the future, and any questions they have.

SHARE: You just learned about climate, weather, and the scientific method as you collected data to share with climate scientists. You examined climate change's impact on your community, talking to each other and an expert. You mapped what you know and what resources can help your community to fight climate change. Lastly, you made a Climate Challenge project that raised awareness and asked others to get involved in climate action.

DO: Congratulate everyone for completing the Girl Scout Climate Challenge. Hand out patches and thank guests or presenters for their time. Then, have them sing the "Make New Friends" song or take part in another Girl Scout tradition to end their time together.

Event Planning Tool for the Girl Scout Climate Challenge Event

Planning	
In-Person Event Location	Virtual Event Online Platform
Date	Time
Grade levels: All Daisy Brownie Junior Cadette Senior Ambassador	
Climate Challenge Activities	
Recruitment/Promotion Plan	

Contacts (Name and Email)	
Key Contact	
Additional Contacts	

Key Roles for the Event (Name and Email)	
Facilitator 1, K–5	
Facilitator 2, K–5	
Facilitator 1, 6–12	
Facilitator 2, 6–12	
Registration	
Customer Care	
Materials	
Wrangler	
Presenter	
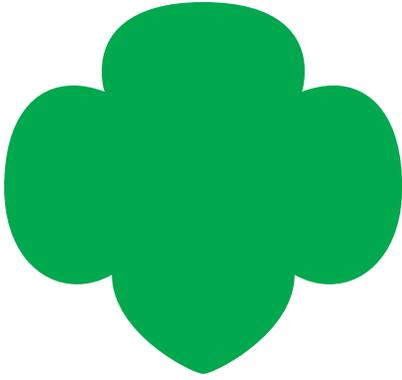
You're Invited to the Girl Scout Climate Challenge Event!

Did you know that you can save polar bears, protect trees, and help your neighborhood fight climate change?

Join Girl Scouts and other youth for an event to participate in the 2022 Girl Scout Climate Challenge.

At the event, you'll:

- Explore climate science
- Contribute data to a real climate change study or experiment
- Meet climate experts and others in your community
- Investigate how climate change affects your community
- Work with other youth on a Climate Challenge Project
- Receive the Girl Scout Climate Challenge Patch!

What's the Girl Scout Climate Challenge?

The Girl Scout Climate Challenge engages Girl Scouts and non-Girl Scouts of all ages to get outdoors to learn about climate science, connect with their communities to understand how they're affected by climate change, and spread awareness of the issue to create sustainable change.

Find out more at girlscouts.org/climatechallenge.

You're Invited to the Girl Scout Climate Challenge Event!
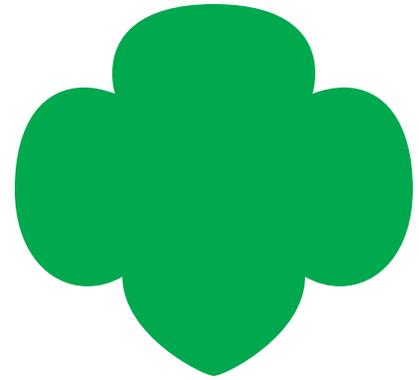
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Find out more at girlscouts.org/climatechallenge.

To get ready for the event, you'll need:

- Computer or tablet with internet access
- The Girl Scout Climate Challenge Activity Guide and Resources for your age (either Grades K–5 or 6–12), found at girlscouts.org/climatechallenge
- For Grades 6–12 only: **Climate Change People Search**

- materials (found on the SciStarter.org/GirlScout-ClimateChallenge)
- Partner over 13 years old to help you log data
- Index cards, sticky notes, or sheets of paper
- DIY art supplies, like poster board, paint, crayons, etc.
- Markers or colored pencils
- Paper
- Pencil
- Tools to help with observation, like binoculars, magnifying glasses, etc. (optional)

This resource has been made possible by SOLV Energy.

Climate Change People Search

Find someone who...	Name	Notes
Has joined in climate change community action		
Is worried about what the future might bring		
Has heard that a warming climate will bring new diseases		
Is not sure what the difference is between climate and weather		
Feels the normal rhythm of the seasons is changing		
Knows of people who have had to move because of the effects of climate change		
Can think of changes being made to stop climate change getting worse		
Believes wealthy nations need to do more to address climate change		
Can share a recent climate change story		
Is trying to be "green" by cutting down on energy use		
Believes that climate change is not that serious		
Knows of a farmer who is worried about climate change		
Feels that their lifestyle and culture will be affected by climate change		
Can explain why girls and women are more impacted by climate change		
Has seen the effects of climate change where they live		
Can think of changes being made to adapt to climate change		
Feels driven to act to slow climate change		
Can name at least one climate change prediction made by scientists		
Has learned of species going extinct because of climate change		
Wonders how different the lives of future generations will be due to climate change		

Girl Scout Climate Challenge

Our climate is changing. Carbon and other greenhouse gases trap heat in the atmosphere. This causes hotter summers and warmer winters. Glaciers are melting, changing beaches and shorelines. Animals and plants are losing their habitats. Weather is more extreme with droughts, hurricanes, and blizzards.

Be a climate advocate with the Girl Scout Climate Challenge. Complete ten activities. Use the resources. And check out the Girl Scout Climate Challenge on SciStarter for citizen science projects!

Part 1: Explore climate science. Scientists need data, or information, to understand climate change. Observe nature, gather data, and share it with scientists. Choose four activities:

- ☐ Discover the difference between weather and climate.
- ☐ Explore greenhouse gases and the carbon cycle.
- ☐ Learn the steps of the scientific method.
- ☐ Share data with climate scientists.
- ☐ Learn about local issues at a water facility.
- ☐ Take field notes about your environment.
- ☐ Explore natural habitats and build a home for bugs or animals.
- ☐ Explore land, air, water, and biodiversity at a garden.
- ☐ Find out how trees and climate are connected with the Girl Scout Tree Promise.
- ☐ Learn about climate change's impact on bees and other pollinators.

Part 2: Connect with your community. Climate change happens everywhere, even in your community! Find out what others care about and how they want to make a difference. Choose four activities:

- ☐ Find out how climate impacts different groups of people, like women and girls.
- ☐ Interview community members about climate change.
- ☐ Talk to a local climate scientist, organizer, official, or anyone trying to help the planet.
- ☐ Make a map, art, or model of community resources (from memory or through observation).
- ☐ Plant a tree with the Girl Scout Tree Promise.
- ☐ Learn about invasive plants and help remove them from your community.
- ☐ Map examples of erosion in your community.
- ☐ Reduce your household's carbon footprint.
- ☐ Go to a community event to help the planet.
- ☐ Research environmental groups.

Part 3: Share hope. Climate change is a big problem no one person can solve, so raise awareness in your community! Make a plan and design your project. Then share it to get others involved. Do both activities:

- ☐ **Create your challenge project.** Choose a part of climate change that's important to your community. Research and plan a project. Build a rain garden, start a community composting project, or film a video. It's up to you!
- ☐ **Share your project with your community.** When you've finished, tell your community what you've done. Include an action that challenges others to get involved!

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Explore Climate Science

What's climate change?

Weather is a specific event—like a rainstorm or hot day—that happens over a few hours, days, or weeks. **Climate** is average weather patterns in an area over a longer period—like 20 or 30 years.

Climate change is when weather patterns in certain areas change over time. Most scientists believe that climate change is happening and making our weather more extreme. It's causing rising seas, stronger storms, and shifting habitats. Small, naturally occurring changes contribute to climate change, but human activity is responsible for most of it. Unfortunately, this creates problems for people, plants, and animals.

What's the connection between climate change and carbon?

Plants make their own food! They take carbon out of the air. They use it, along with water and energy from the sun, to make food. Plants store about half of the carbon that they take in. The other half is released back into the air. When the plants eventually die, the carbon they had stored gets released back into the air, too. This is called the **carbon cycle**. When forests get cut down and other plants die, not as much carbon is taken out of the atmosphere.

Communities, countries, and businesses measure their **carbon footprint**. That term refers to the amount of **carbon dioxide**, or CO_2—a greenhouse gas caused by human activities—that gets released into the environment. Factories, cars, planes, and other technological innovations create carbon dioxide.

Greenhouse gases, such as carbon dioxide, are among the main reasons that the climate is changing. The bigger the carbon footprint, the more greenhouse gases that are being released into the atmosphere. They trap heat from the sun and cause the earth to get hotter. When this happens, glaciers melt and water levels rise.

In the last few hundred years, the earth's temperature has gone up by 2 degrees Fahrenheit. This sounds like a small change, but it's enough to hurt people, plants, and the planet.

Try It Out! Explore weather and climate.

You'll need: a handful of colored beads or other items, a bag or bowl, paper, and a pencil.

Instructions:

1. Put the beads in a bag or bowl. They represent different kinds of weather in an imaginary town.

2. Name your town. Decide and write down what kind of weather each color represents. For example, purple beads might represent rainy days and orange beads might represent warm, sunny days.

3. Close your eyes and choose your first bead. This is the weather for your first day. Write down the type of weather for that day. Continue with the rest of your beads.

4. Count how many times each kind of weather occurred in your town. Remember, this is how many beads of each color you have. That represents the climate for a given period.

5. Analyze what you found. For instance, was it mostly sunny and warm, cold and rainy, or something else? If the climate in your town changed, how? Why do you think it's important to keep track of weather from day to day?

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What can we do to stop climate change? What can I do to help?

We can't solve climate change on our own. We need to work with others. Everyone has a role to play. Individuals, communities, businesses, and countries can all help stop climate change. Together, we can reduce the amount of pollution and prevent even worse climate change.

People can reduce their carbon footprint in many ways. They can refill a water bottle or cup instead of using disposable water bottles. They can turn off unused lights, or walk or ride a bike instead of driving. They can also reduce food waste and use fewer plastic and paper products. They can use showers and toilets that need less water.

What businesses and governments do makes an even bigger impact. They can find cleaner ways to make and ship products. They can reduce waste and use alternative energies, like electric, solar, or wind. They can make laws and policies about fuel in vehicles, pollution, or carbon limits.

Nature itself is also full of solutions! Trees clean the air by reducing greenhouse gases and pollution. They also cool communities and provide habitats for animals. Planting trees is one way to reduce pollution. Protecting existing forests will help, too. You can learn more about the power of trees with the **Girl Scout Tree Promise**.

How can I learn more about climate change and climate science?

Scientists conduct studies and experiments. This helps them understand what is happening with climate and the environment. They need data from all over the world about weather, plants, animals, air, and land. All of these things connect as part of our global ecosystem.

When scientists need a lot of data for their research, they ask regular people to help collect it. This is called citizen science. You can help scientists learn more about climate by observing, measuring, gathering, and sharing data. To find out more about citizen science, check out the **Girl Scout Climate Challenge on SciStarter**!

Try It Out! Experiment with the greenhouse effect.

You'll need: 2 glasses of equal size, 2 cups of cold water, 10 ice cubes, a plastic bag, tape, and a sunny place.

Instructions:

1. Fill each glass with a cup of cold water and add five ice cubes. Wrap the top of one glass in a plastic bag and seal it tightly with tape.

2. Place both glasses in sunlight for about an hour.

3. After one hour, look at your glasses. The glass that was covered in plastic should be warmer.

What happened? The bag trapped heat in the glass. This is the same thing that happens when greenhouse gases trap heat in the atmosphere. Can you imagine this process happening to our planet?

Try It Out! Create a climate change superhero.

Imagine a new superhero who fights climate change. Show everything you can about your superhero. For example, why are they fighting climate change? What are their superpowers? What would their first mission be? How will they team up with others to make a difference?

Connect with Your Community

Think globally. Act locally. Climate change is a big problem, and many communities are not prepared. Communities need the climate that they're used to so they can survive. Some near coastal areas may end up underwater as sea levels rise. Others, like communities in California, are becoming even more dry and hot. That makes wildfires more common. Homes and land are burning up.

When we take care of our planet, we take care of our communities. Everything and everyone is connected in our global environment. Climate change happens everywhere, but it affects different people and communities in very different ways. This means that we need to fight climate change in ways that are fair. We must involve both the people affected by it and the people and businesses creating it. People and businesses who create the most greenhouse gases should do more of the work to combat climate change. We need to make sure that those most hurt by climate change are included. This is called **climate justice**.

People everywhere are working to stop climate change. There's a big community of scientists, organizers, students, and others working together to stop climate change. Citizen scientists gather data. Engineers develop alternative energy sources and ways to remove greenhouse gases from the atmosphere. People plant trees, preserve existing forests, and design urban areas to prevent erosion or heat islands.

The world needs to make big changes to stop climate change. We need better plans for wildfires, floods, and hurricanes. We need safer and less expensive places to live. We need more eco-friendly public transportation and energy. We can start by learning what is going on in our community. By connecting with others, you can learn new information and skills. You can work together to change the world!

How can I learn more about climate change and my community?

You can be a leader, advocate, and activist for the environment at any age! Start by thinking about changes you can make. Then learn more about your community. Find out what others are doing. What groups are already making a difference? How can you get involved?

Not sure where to get started? Check out these ideas for ways to learn more about climate and your community:

- **Go somewhere.** Visit a park, garden, or nursery. Go to a marine center or water facility. Attend a community event, like a beach or neighborhood cleanup. Explore how climate change affects the people, animals, and plants where you live. Find out how you can protect the environment in your area. What can you do on your own? How can you work together with others?

- **Talk to someone.** Talk to a park ranger, marine biologist, or any other expert about how climate change has impacted your local area. Interview friends, family, and others. Meet with a local nonprofit or group that's protecting the planet. What do people know about climate change? How does it make them feel? What are they doing to make a difference? How can you help them?

- **Do something.** Learn through action! Plant a tree or remove invasive species from your community. Reach out to a local official. Talk to your family about what you can do together. Watch videos and find articles about climate and your community. What can you do as an individual to fight climate change? How can you connect with others to make even more of an impact?

Share Hope

To stop climate change, everyone needs to act! Choose one part of climate change that interests you and is important to your community. Make a project to spread awareness. Climate change may seem like an unsolvable problem, but you can help others learn about climate change and what they can do to fight it.

Create a message to share with your community. Use what you've learned to invite them to make a change. include an action people can take to help the planet.

For example:

- **Invite others to reduce their carbon footprint.** Ask them to walk, ride a bike, or take public transportation. Invite them to use less plastic. Plant trees or a garden.
- **Educate others through art.** Make posters. Host a puppet show. Write a story. Paint a mural.
- **Call on community leaders, government officials, and businesses.** Share how you feel about climate change and what you'd like them to do about it. Write letters. Make a video. Visit your elected officials. Attend community events and rallies.

You can work with others to create your message. You also have resources to help you. Start with friends and family members. Ask experts. Talk to businesses and community groups. They might have ideas, materials, or volunteers to help. You can also connect with other environmental groups. They can help you, and you can help them! Reach out to your library. Contact local colleges and universities. Look at local and international organizations.

When people learn about your challenge project, they may be inspired to act, too. Let your community know what you would like them to do. Start at home or with your Girl Scout troop. Then invite your larger community, like the people at your school, place of worship, or local businesses. Talk to local leaders and elected officials. Share your project and ask them to make climate-friendly choices.

And remember, don't be shy! Contact your local newspapers, magazines, TV stations, and radio stations. They want to know what people in the community are doing. And if they choose to do a story, even more people will learn what they can do to help!

When you're done, make sure you celebrate! By informing and inspiring others, you've helped the world get one step closer to beating climate change!

Not sure where to get started?

Check out these ideas to spread awareness about climate change:

- ▶ Create a collection of children's books or stories about climate action.
- ▶ Design a poster campaign, "how to" handout, or playbook.
- ▶ Perform a skit or make a movie.
- ▶ Draw a comic or design items.
- ▶ Give a speech or make a presentation.
- ▶ Write and perform a song.
- ▶ Host a workshop or event, like a play, art exhibit, citizen science day, or tree-planting event.
- ▶ Make an app, website, or blog.
- ▶ Write a letter.
- ▶ Advocate for a law, policy, or community improvement, like using solar energy or a new community garden.

Girl Scout Climate Challenge

Our climate is changing. Carbon and other greenhouse gases trap heat in the atmosphere. This causes hotter summers and warmer winters. Glaciers are melting, changing beaches and shorelines. Animals and plants are losing their habitats. Weather is more extreme with droughts, hurricanes, and blizzards.

The Girl Scout Climate Challenge puts you at the center of science and community action. Complete ten activities. Use the resources. And check out the Girl Scout Climate Challenge on SciStarter for citizen science projects!

Part 1: Explore climate science. Scientists need data, or information, to understand climate change. Observe your environment, gather data, and share it with scientists. Choose four activities:

☐ Discover the difference between weather and climate.

☐ Use the scientific method to sketch observations, create a field guide, or design an experiment.

☐ Observe the weather more than once to compare changes over days, weeks, or even months!

☐ Collect data for climate science.

☐ Investigate the global ecosystem and connections between land, water, air, and biodiversity.

☐ Explore greenhouse gases and the carbon cycle.

☐ Find out how trees and climate are connected with the Girl Scout Tree Promise.

☐ Discover how biodiversity and climate connect.

☐ Interview a global citizen or climate expert.

☐ Watch a movie or documentary about climate activists advocating for change.

☐ Investigate climate laws and policies.

☐ Interview a gardener or farmer about the impact of climate change on our food supply.

Part 2: Connect with your community. Climate change affects where people live, play, and grow food. Explore how it impacts groups of people differently. Find out what your community is concerned about and how they want to make a difference. Choose four activities:

☐ Explore climate justice and how climate impacts groups of people in different ways.

☐ Survey your community about climate change.

☐ Go to a climate event in your community.

☐ Explore your community's history of climate action.

☐ Plant a tree with the Girl Scout Tree Promise.

☐ Create a mind map exploring the root causes and impact of climate change on your community.

☐ Connect with local environmental groups.

☐ Examine what local leaders think about climate change.

☐ Talk to a local climate scientist or organizer.

☐ Design an anti-climate change community.

☐ Make a community map for climate resources.

☐ Learn about water's role in your community, such as sources, quality, treatment, and management.

Part 3: Share hope. Climate change is a problem no one person can solve, so get others involved! Take what you've learned and turn it into community action. Do both activities:

☐ **Create your challenge project.** Choose a climate issue to address. Research it and design your project. Gather resources and volunteers. Protect your local watershed, create a speakers' series, or design signs for a local trail. It's up to you!

☐ **Share your project with your community.** When you've finished, present your project or hold an event with your community. Increase awareness about climate change and how your community can help. Include an action to get others involved!

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Explore Climate Science

What's climate change?

Weather is a specific event—like a blizzard, hot day, or an afternoon thunderstorm—that happens over a few hours, days, or weeks. **Climate** is average weather patterns in an area over a longer period—like 20 or 30 years. Global climate is the average climate over the whole world.

Climate change is when the average conditions—such as temperature and rainfall—in certain areas change over time. Most scientists believe that climate change is happening and making our weather more extreme. It's causing rising seas, stronger storms, and shifting habitats. Small, naturally occurring changes contribute to climate change, but human activities, such as using gas to drive cars, burning forests to farm on or build cities, and burning coal for electricity, are responsible for most of it. Unfortunately, this creates problems for people, plants, and animals.

What's the connection between climate change and carbon?

During photosynthesis, plants take carbon out of the air and use it, along with water and energy from the sun, to make food. Plants store about half of the carbon that they take in. The other half is released back into the air. When the plants die, the carbon they had stored gets released back into the air, too. This is called the **carbon cycle**.

When forests get cut down and other plants die, less carbon is taken out of the atmosphere. Carbon dioxide, or CO_2, is a greenhouse gas released into the environment by human activities—like running factories, driving cars, and flying planes. Greenhouse gases, like CO_2, are among the main reasons that the climate is changing. They trap heat from the sun and cause the earth to get hotter. When this happens, glaciers melt and water levels rise. More greenhouse gases cause an increase in the earth's temperature. This is called the greenhouse effect. In the last few hundred years, the earth's temperature has gone up by 2 degrees Fahrenheit. This sounds like a small change, but it's enough to affect people, plants, and the planet.

Communities, countries, and businesses measure their **carbon footprint**. The bigger the carbon footprint, the more greenhouse gases are being released into the atmosphere.

Try It Out! Explore the greenhouse effect.

You'll need: two thermometers, a glass jar with lid (large enough to contain one thermometer), a timer, paper, a pen, and a sunny spot inside or outside.

Instructions: Write down the temperature of each thermometer (they should be the same). Then, in your sunny spot, put one thermometer inside the glass jar and screw on the lid. Place the other thermometer next to the jar, uncovered. Write down the temperatures of both thermometers every 5 minutes. After one hour, compare the data on each thermometer. What did you observe?

What happened? The air inside the jar is warmer than the air outside. Solar energy shines through the glass and turns into thermal energy that can't escape the jar because of the cover. This is similar to how heat gets trapped in our atmosphere. During the day, the sun shines on us and creates energy. At night, most of that energy escapes back into space, but some of the heat is trapped to keep our temperature stable.

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What can we do to stop climate change? What can I do to help?

We can't solve climate change on our own. We need to work with others. Everyone has a role to play. Individuals, communities, businesses, and countries can all help stop climate change. Together, we can reduce the amount of pollution and prevent even worse climate change.

People can reduce their carbon footprint in many ways. They can refill a water bottle or cup instead of using disposable water bottles. They can turn off unused lights or walk or ride a bike instead of driving. They can also reduce food waste and use fewer plastic and paper products. They can use showers and toilets that need less water.

What corporations and governments do makes an even bigger impact. They can find cleaner ways to manufacture and ship products. They can reduce waste and use alternative energies, like electric, solar, or wind. They can make laws and policies about fuel efficiency in vehicles, pollution, or carbon limits on businesses.

Nature itself is also full of solutions! Trees clean the air by reducing greenhouse gases and pollution. They also cool communities and provide habitats for animals. Planting trees is one way to reduce carbon pollution. Protecting existing forests will help, too. You can learn more about the power of trees with the Girl Scout Tree Promise.

How can I learn more about climate change and climate science?

Around the world, scientists are conducting studies and experiments to better understand what is happening with climate and the environment. They need data about weather, plants, animals, air, and land to find solutions that help our global ecosystem. When scientists need a lot of data for their research, they ask regular people to help collect it. This is called citizen science. You can help scientists learn more about climate by observing, measuring, gathering, and sharing data. To find out more about citizen science, check out the Girl Scout Climate Challenge on SciStarter!

You can also learn how climate change is affecting communities on local, state, national, and international levels. Research changes in your community over the last 20 years. Then examine the United States, other countries, and each continent. What impact has climate change had on business, income, health, and social groups? What are governments, STEM professionals, businesses, and others doing to help? What organizations or groups are working to raise awareness and find solutions?

Try It Out! Track progress on the Paris Climate Agreement.

In 2015 and under the United Nations Framework Convention on Climate Change, the leaders of countries from around the world gathered in Paris to sign a pact to address the negative effects of climate change. Its goal is to reduce greenhouse gas emissions in all countries and, hopefully, limit the global temperature increase this century to 2 degrees Celsius at most. The countries vowed to reduce emissions more and more over time. The agreement also asks richer countries to help poorer countries, as the richer countries are most responsible for carbon emissions, yet emerging economies suffer the most from their consequences.

Now, research the progress and impact of the Paris Agreement. Which countries signed the Paris Agreement? Which ones are on track to reduce their carbon emissions? Which have fallen behind? How much has the global temperature changed since 2015? What laws or policies have been created? Which should be created?

Connect with Your Community

What's climate justice?

Think globally. Act locally. Climate change affects the entire planet, but communities experience it differently depending on where they are and who lives in them. Some places face rising water lines or flooding. Others are becoming more dry and hot, leading to wildfires and extreme heat.

When we take care of our planet, we take care of our communities. Everything and everyone is connected in our global environment. **Climate justice** recognizes that climate change affects different people in different ways. It means that we need to combat climate change in ways that are fair. We must involve both the people affected by it and the people and businesses creating it.

How does climate change impact different communities?

Climate change impacts poor and vulnerable people more than wealthy, privileged people. People in less industrialized places have done the least to cause climate change, but they suffer the most from its effects. Black, Indigenous, (and) people of color (BIPOC) are more at risk to experience heat, pollution, and other impacts of climate change. Housing and lending policies and other city planning decisions have forced communities of color into areas with fewer trees or "heat islands" that, as a result, experience more pollution and higher temperatures that negatively affect people's health.

Rural communities experience erosion, mudslides, and flooding when trees or other native plants are removed or die. This affects farm and ranch land.

Women and girls are uniquely affected by climate change, as they tend to face traditional expectations about caring for homes and people. They often have fewer resources than men and boys, and are more likely to have to leave their homes.

Climate justice requires justice for all. We must address climate change in ways that are fair. Those who have benefited the most from fossil fuels and deforestation, including businesses, must help and do even more of the work. The people suffering the most should be heard, respected, and included in finding solutions and making decisions.

How can I support climate justice? How can I learn more about my community?

The world needs to make big changes to stop climate change and advance climate justice. We can create better plans to avoid and survive natural disasters. We can build less expensive and more environmentally friendly housing. We can spend more money to create clean forms of public transportation, like electric cars and buses. We can research clean energy, like solar and wind power.

People everywhere are coming together to make a difference. Citizen scientists gather data. Engineers develop alternative energy sources and ways to remove greenhouse gases from the atmosphere. People plant trees, preserve existing forests, and design urban areas to prevent erosion or heat islands.

Learn what is going on in your community. How is climate change affecting children and teens? How does it affect women and girls, BIPOC communities, or those living in cities or rural areas? Seek out people and local organizations that are helping. Ask questions and find inspiration. By connecting with others who care about the same thing as you, you can learn new information and skills. You can work together to change the world!

Share Hope

To have an impact on climate change, everyone needs to act! Individual people as well as communities, businesses, and governments all need to get involved. Choose one part of climate change that interests you and is important to your community. Make a project to spread awareness. Climate change may seem like an unsolvable problem, but you can help others learn about climate change and what they can do to fight it.

Create a message to share with your community. Use what you've learned to invite others to take action for the planet. For example:

- **Invite people to reduce their carbon footprint.** Ask them to walk, ride a bike, or take public transportation. Have them use less plastic. Help them save water and energy at home.

- **Educate others through art.** Make posters. Stage a play or film a video. Write poetry or a story. Paint a mural or write a song.

- **Host an event** for others to learn about the issue and get involved. Plant trees or do a citizen science project together.

- **Use digital technology** to create a social media campaign, educate others, and invite people to community events and rallies.

- **Call on community leaders, government officials, and businesses.** Share how you feel about climate change and what you'd like them to do about it. Write a letter to Congress or your city council. Create a policy statement or make a video. Visit your elected officials. Attend community events and rallies.

You can work with others to create your message. Start with friends and family members. Ask experts. Talk to businesses and community groups. They might have ideas, materials, or volunteers to help. Connect with environmental groups, climate organizers, and youth activists. They can help you, and you can help them! Reach out to your library. Contact local colleges and universities. Look at local and international organizations.

When people learn about your challenge project, they may be inspired to act, too. Let your community know what you would like them to do. Start at home or with your Girl Scout troop. Then, invite your larger community, like the people from your school, place of worship, or local businesses. Talk to local leaders and elected officials. Share your story with local media.

When you're done, know that you're leading by example. You're sharing hope that we can fight climate change and win.

Not sure where to get started?

Check out these ideas to spread awareness about climate change:

- Make a climate collection or archive of books, stories of local change, or oral histories.

- Create a "how to" handout or playbook with local resources and actions.

- Film a web series, video tutorials, documentary, or live-action movie.

- Design a poster, zine, comic, T-shirt, or tote bag.

- Give a speech, make a presentation, or create a petition.

- Write and perform a song or make a music video.

- Host a workshop or event, like a concert, play, poetry slam, art exhibit, citizen science day, or tree-planting event.

- Develop an app, website, blog, or social media campaign.

- Write an op-ed or letter to a local outlet, city council, or government official.

- Advocate for a law, policy, or community improvement, like using solar energy or cutting carbon emissions.

Girl Scout Climate Challenge

About the Girl Scout Climate Challenge

The Girl Scout Climate Challenge engages Girl Scouts and non-Girl Scouts of all ages in activities that get them outdoors to learn about climate science, connect them with their communities to understand how they're impacted by climate change, and have them spread awareness of the issue to create change.

The Climate Challenge includes activities that connect the science of climate with STEM, community problem solving, and outdoor adventures. It also includes citizen science projects curated by SciStarter, an online citizen science hub with more than 3,000 research projects to participate in.

How to Complete the Girl Scout Climate Challenge

Girl Scouts and non-Girl Scouts in kindergarten through grade 12 can complete the Girl Scout Climate Challenge by completing 10 activities total on the activity guide for their grade level (K–5 or 6–12). They must complete four activities from Part 1, four activities from Part 2, and both activities in Part 3. They can complete them as individuals or as a group. They can do them at home, camp, a Girl Scout meeting, or anywhere else they're inspired to make a difference.

There are many ways to support your youth to complete the Climate Challenge. You can:

- **Do it with others.** Many of the Climate Challenge activities can be done at home or in your neighborhood. Youth can complete the activities on their own or with family and friends. This can be a great chance to get outdoors and make a difference together!

- **Find friends to help.** While expertise and experience isn't necessary to complete the Climate Challenge, involving others who can talk to youth about their work and knowledge of climate science and action can bring the material to life. It can also provide youth with a mentor or role model of someone who is trying to make a difference locally by addressing climate change.

- **Go to a Girl Scout event, camp, or troop meeting.** While the activities can be done anywhere, Girl Scouts and youth may want to work together and connect with others who care about the environment. To support them, check with your local Girl Scout council to see if it is having an event. If your youth is a Girl Scout, have them bring the Climate Challenge to their troop as something they could do together or at camp.

When youth have completed 10 Climate Challenge activities, purchase the patch at the Girl Scout Shop.

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How to Talk to Youth About Climate Change

Climate change can be stressful and overwhelming—it's not a problem we can solve on our own. Kids today know this and that they're both angry and afraid. They know about the impact of climate change and are worried about the future of our planet. You can make climate change less scary by supporting youth to learn what causes climate change, how people can help address it, and what they can do.

The **activity guides and resources for youth** (available for K–5 and 6–12) include information to support each part of the Girl Scout Climate Challenge. You can also find additional examples, information, and discussion questions below to help support youth as they complete activities for each part of the Girl Scout Climate Challenge.

Part 1. Explore Climate Science.

It's important that before learning how they can address climate change, youth learn the "why" and science behind climate change.

Share the science. Provide simple and concrete explanations about the causes of climate change. Use the glossary on page 8. Share basics like information about weather versus climate, how a rising temperature leads to extreme weather, the role of trees, and how human behavior contributes both to creating and preventing climate change. Make sure to also share what scientists, engineers, and other STEM professionals are doing to learn more about climate change and find solutions. You can also check out the Girl Scout Climate Challenge on SciStarter for a set of curated projects for youth to collect data and contribute to climate science research.

Share examples. If you can, research (or have your youth research) your area's weather and climate. Share examples that compare climates, such as, "In Miami, Florida, the weather during winter ranges from the low 60s to mid-80s, with sunshine and the possibility of thunderstorms or rain showers; the climate is considered tropical. Tropical climate is defined as an area that experiences warmer and rainier seasons all year round. In comparison, New York City's daily weather conditions during the winter would be colder with temperatures mostly between 20 degrees and 40 degrees, with the possibility of snow showers. New York City's climate would be called humid subtropical because of its extreme cold weather in the winter and extreme hot weather in the summer."

Share what individuals, businesses, and nations can do. When explaining the greenhouse effect and carbon footprint, make sure youth understand the role of humans and industrialization as well as the difference between what individuals, communities, businesses, and governments can do to contribute to and address climate change. For instance:

- What **people and communities** do contributes carbon dioxide (CO_2) to the atmosphere. Traveling by car or airplane, using plastic, wasting water and food, and leaving lights on when they're not needed are all examples of actions that burn fossil fuels (like cars and planes) or waste energy (which is usually created by the burning of fossil fuels). People can make changes to reduce their carbon footprint.

- What **corporations and governments** do makes an even bigger impact. Fossil-fuel-based manufacturing and

Discussion Questions

▶ What's the difference between weather and climate?

▶ Have you noticed changes in the climate or weather?

▶ Can you explain what a greenhouse gas is? What's a carbon footprint?

▶ How are scientists learning about climate change?

▶ How have people, communities, businesses, and governments contributed to climate change?

▶ What are some unique ways people are dealing with and finding solutions for climate change?

transportation pumps a lot of CO_2 into the atmosphere. Clear-cutting forests for plantations to grow crops like bananas, palm oil, sugarcane, and coffee causes erosion and destroys trees that would be pulling carbon out of the atmosphere.

- When **energy companies and local and national governments** make decisions about what kind of energy to use to create electricity, they make decisions with implications for climate change. If they choose to build infrastructure for coal or natural gas power plants, that will emit more CO_2 than other forms of energy creation, like hydroelectric (water), solar, or wind power plants. When state and national governments make rules about fuel efficiency in vehicles, or pollution or carbon limits on manufacturing, they're also making decisions with implications for climate change. Policies that can help curb climate change include things like plastic bag fees; car, bike, and scooter shares; electric-powered buses; and tax incentives for solar panels.

Part 2. Connect with Your Community.

As youth learn about climate change, you can help them examine the issue from the international, national, state, and local levels, as well as how it affects different communities or groups of people. For instance:

- **Race:** Black, Indigenous, (and) people of color (BIPOC) are more at risk of experiencing heat, pollution, and other impacts of climate change. In many areas, laws and government policies have caused a majority of BIPOC to experience more of the impact of climate change. Housing and lending policies, and other city planning decisions (such as redlining), have segregated or separated them and forced them into heat islands and places with fewer trees. These areas experience higher temperatures that affect peoples' health, leaving people in BIPOC communities more likely to die from heat-related causes.

- **Geography:** Cities with areas that have fewer trees experience "heat islands," where buildings and pavement absorb and retain heat from the sun. Without trees to cool and clean the air, these areas have more pollution and often very high temperatures. BIPOC and low-income communities are more likely to have heat islands than other communities. Rural communities may experience erosion, mudslides, and flooding when trees or other native plants are removed or die. This has negative effects on farm and ranch land.

- **Gender:** Women and girls are uniquely impacted by climate change as they face traditional expectations about caring for homes and people. They often have fewer resources than men and boys, and are more likely to have to leave their homes.

Provide resources. When discussing climate change and justice, share information with your youth (or help youth to research information) about what is happening right in their own community, along with resources about research and efforts on the state, national, and global levels. Encourage them to research the issues and organizations working on them, especially any local groups where efforts could be combined.

Balance your examples. When discussing the impact of climate change, balance your examples of harmful impacts with those of how people are making a difference: citizen scientists gather data; engineers develop alternative energy sources and ways to remove

Discussion Questions

▶ What are your friends and family members saying about climate change?

▶ How are climate change and climate justice related?

▶ How does climate affect different parts of our community?

▶ Have you noticed parts of our community that have more or fewer trees than other parts, or that have been impacted by climate change?

▶ What resources or groups are already working on climate change in our community? How can you connect with them to amplify efforts?

greenhouse gases from the atmosphere; and people plant trees, preserve existing forests, and design urban areas to prevent erosion or heat islands. If you can, find local, relatable stories of youth and others working to create change for inspiration.

Turn fear into motivation. The climate crisis can be very scary. Paralyzing, even. When discussing climate change with your Girl Scouts, ask how they feel. Acknowledge their fear, anger, or anxiety. Then provide examples of when people have faced very challenging situations in the past and have made big changes or advances, such as how communities respond to natural disasters with humanitarian aid; how scientific research makes buildings and other places safer and more resilient; and how the world has worked together to prevent the spread of serious illnesses, like the flu, polio, or COVID-19.

Part 3. Share Hope.

To have an impact climate change, everyone needs to act!
Individual people as well as communities, businesses, and governments all need to get involved. You can help Girl Scouts and young people to learn about climate change and what they can do to fight it. Even more, you can encourage them to share what they've learned and invite others, getting more people involved in the fight against climate change!

Start small, but think big. Get youth thinking about changes they can make individually, and then "zoom out" to what their families, communities, states, the nation, and the world can do. Remind them that they can be leaders, advocates, and activists at every level. In other words, think globally and act locally.

Keep it youth-led. The examples given on the "Share Hope" resource sheet in each activity guide are intended to give a sense of what a Climate Challenge project could look like. Youth do not have to choose a project from this list! Instead, guide them to brainstorm ideas, get feedback, and come up with a plan. Encourage them to use their talents, skills, and strengths to create a project that both engages and spreads awareness in their community.

Research the problem. Help youth to find out more about their community and the issue they want to address with their Climate Challenge project. Support them to research and learn more online or through newspapers, videos, and anything else. They may also be able to talk to people in the community to gather ideas. For example, if youth want to engage their school community, they could talk to other students or create a quick online survey to gather ideas and feedback.

Use your network. Youth may need your help connecting with others who can support their project. Brainstorm any connections you have with experts, organizations, officials, volunteers, or anyone else who can support. You may also need to help youth contact their school, town officials, or others to get permission or schedule meeting time to share their projects. As much as possible, have youth lead the conversation so they have the experience of connecting with others to make a difference.

Don't rush it. It may take more time than expected for youth to complete their Climate Challenge project, and that's all right! Support them to take the time they need to create a lasting project that makes an impact on their community. They'll have a more valuable experience if they have the time to create and refine a project they care about, instead of rushing to finish.

Discussion Questions

▶ How does thinking about climate change make you feel?

▶ What issue or aspect of climate change are you most interested in or passionate about? Which is most important to your community?

▶ How can you use your talents, skills, and strengths to make a difference? What are some activities that you would be interested in that help climate change?

▶ What type of support or additional knowledge do you want when exploring climate change?

▶ What can you create to spread awareness about climate change? How can you ask others to get involved? How can you plan your project like a scientist might?

▶ What materials, resources, and community connections are available to support your project?

After the Climate Challenge: Keep the fun going!

Once youth complete the Girl Scout Climate Challenge, they may be inspired to learn more and continue to make a difference. To explore more about the connection between trees and climate, youth of all ages (and adults!) can participate in the Girl Scout Tree Promise.

Girl Scouts can also continue learning about STEM and environmental stewardship in their community and around the world. They can complete the Think Like a Citizen Scientist or It's Your Planet—Love It! Journeys, available for all levels. They can earn their Environmental Stewardship badge, such as Eco Friend for Brownies and Eco Explorer for Seniors. Daisies, Brownies, and Juniors can also continue to explore nature and earn the Math in Nature badges.

Glossary

Biodiversity—the variety of life on Earth that creates our global ecosystem

BIPOC—an acronym for "Black, Indigenous, and people of color"

Carbon dioxide—a gas released by burning coal, natural gas, oil, and wood that traps heat in the atmosphere

Carbon footprint—the amount of carbon dioxide humans release into the environment

Carbon pollution—when we use fossil fuels like burning oil, gas, and coal, the carbon goes into the air, water, and soil

Citizen science—when nonprofessionals help scientists with their research by recording and sharing data

Climate—the average pattern of weather conditions over a long period. Climate is different from weather because weather changes daily.

Climate change—a change in the average conditions—such as temperature and rainfall—in a region over a long period

Climate justice—understanding that climate change affects people in different ways and needs to be addressed in ways that are equitable and involve both the people responsible for and impacted by climate change

Deforestation—the process by which native trees are cut and not replanted, ultimately destroying forests and disrupting the carbon cycle

Drought—continuous period of dry weather when an area gets less rain than the historic average

Environment—the air, water, and land in or on which people, animals, and plants live

Fossil fuels—carbon-based fuel formed from the remains of plants and animals, such as coal, petroleum, and natural gas

Global climate—the average climate over the whole world

Global ecosystem—how plants, animals, humans, and other living organisms work around the planet

Global warming—an increase in Earth's average temperature due to greenhouse gas emissions which trap the sun's energy that causes ice to melt and sea levels to rise

Greenhouse gases—the emissions of carbon dioxide or other gases that contribute to the greenhouse effect

Rural—refers to areas that are usually farms or the countryside where people might live in small villages.

Weather—a specific event, like a rainstorm or hot day, that happens over a few hours, days, or weeks